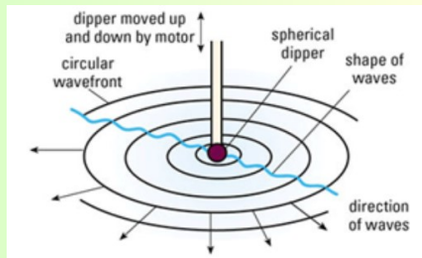
Waves	**Interference**

Learning objectives	**MUST (6)**	Recall the characteristics of superposition, and what leads to constructive and destructive interference
	SHOULD (7)	Understand the term *path difference* in wave analysis, and what we mean by *maxima* and *minima*
	COULD (8/9)	Analyse wave interference to find wavelength/frequency of waves from the path difference

STARTER: This picture shows a dipper in a ripple tank, and the waves it produces. What would you see if you had another one next to it , operated by the same motor? Draw an overhead view in your book.



EXTENSION: How (if at all) would what you see change if some of the water was tipped out, to make the tank shallower?

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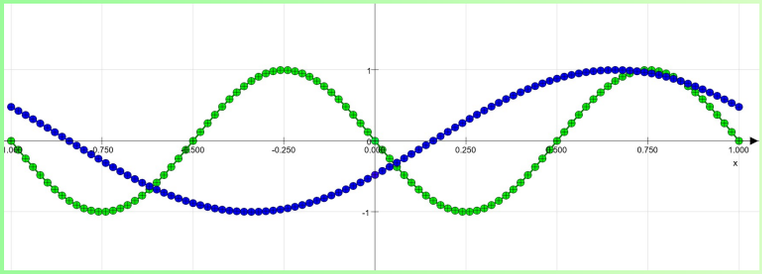
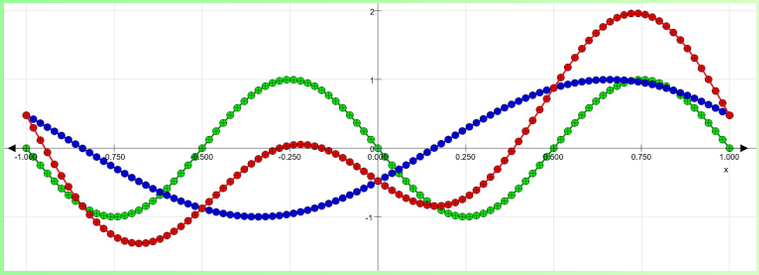
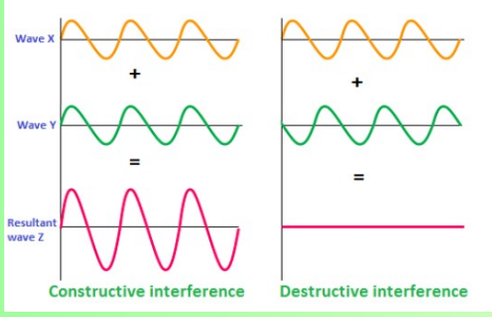
Waves	**Interference**
MUST (6)	Recall the characteristics of superposition, and what leads to constructive and destructive interference





superposition simulator

What do we mean by superposition? What would the superposed wave here look like?



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Waves	**Interference**
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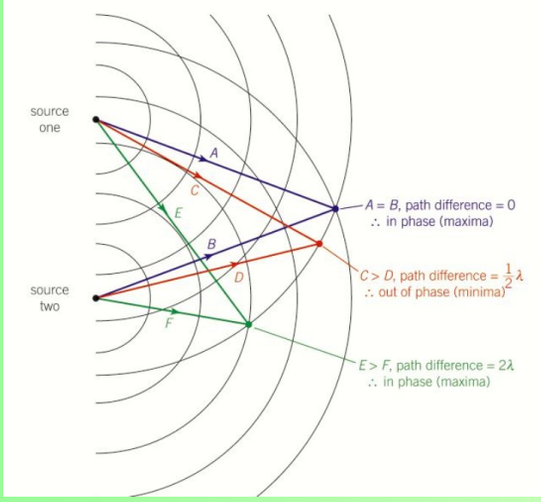
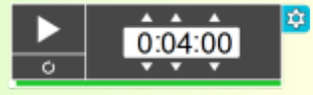
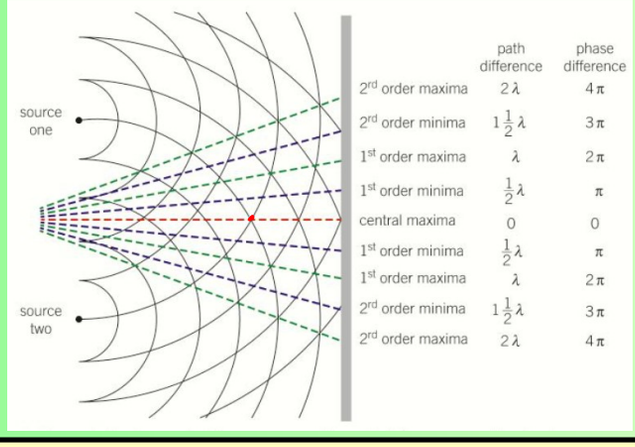


Source one and source two both have the same frequency and are in phase. What can you suggest about the points marked by the blue, red and green dots?

Will the waves from the two sources arrive at the same time? (Hint - look at the wavefronts)

Extension: what kind of interference will happen?





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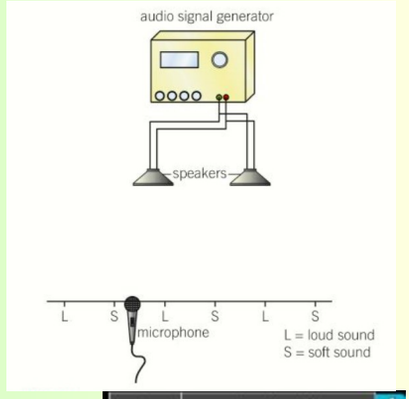
Waves	**Interference**
COULD (8/9)	Analyse wave interference to find wavelength/frequency of waves from the path difference

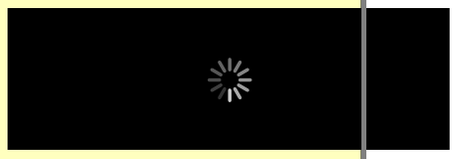
Using the textbooks:

1: 'Interference in sound' exercise

2: 'Interference in microwaves' exercise

Extension: Summary questions, p.223





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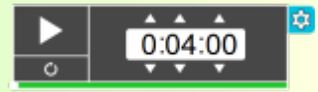
PLENARY: If you shone monochromatic light towards a screen through two very small slits close together, what do you think you would see? Why?



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